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ATS-032 CON/REISSUE

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Reissue Application of)
Satoshi Kono et al.)
Serial No. 08/629,547)
Filed: April 9, 1996)
For: CRANKSHAFT ASSEMBLY FOR)
INTERNAL COMBUSTION ENGINE)

Examiner: V. Luong
Group Art No. 3502

#8
Sub. Decl.

SUPPLEMENTAL REISSUE DECLARATION

Assistant Commissioner of Patents
Washington, D.C. 20231

Sir:

As a below-named inventor, we respectively hereby
declare that:

1. We have reviewed and understand the contents of the
attached substitute specification, including the claims, as
amended by the attached Amendment.

2. This Supplemental Reissue Declaration is being
filed to cover all of the errors in U.S. Patent No. 5,465,635
("the '635 patent) corrected by the attached Amendment, as well
as those errors covered by the Reissue Declaration filed April 9,
1996.

3. All of the errors in the '635 patent corrected by

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the attached Amendment, as well as all of the errors in the '635 patent corrected by the original reissue application papers, arose without any deceptive intention on our part.

4. We believe the original patent to be partly or wholly inoperative because of error, without deceptive intention, by reason of our claiming less than we had a right to claim in the patent. The errors which render the patent wholly or partly inoperative or invalid arose from inadvertence, accident or mistake, and without any fraudulent or deceptive intention on our part, as explained in detail below.

5. The primary reason applicants seek reissue of the '635 patent is to correct the errors in the issued claims of the '635 patent that arise due to some unnecessary claim limitations and the failure to include some features of the disclosed invention in the claims. Due to these listed errors in the claims, the claims fail to adequately protect the invention disclosed in the specification, thereby rendering the original patent at least partly inoperative.

6. Specifically, the original claims of the patent are at least partly inoperative because none of the claims are broad

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enough to encompass the devices shown in the attached Figs. A and B. The attached Figs. A and B show a flywheel assembly in which the reinforcing member 34 has no outward flange (i.e., no first portion), unlike the reinforcing members 4 shown in Figs. 1 and 3 of the '635 patent. The flywheel assembly shown in Fig. B differs from the flywheel assembly shown in Fig. A in that the reinforcing member 54 in Fig. B does not extend completely through the central opening in the flywheel body. The flywheel assemblies shown in the attached Figs. A and B are new preferred embodiments of the Assignee.

7. The inventors' department of the Assignee became aware of the flywheel assembly shown in the attached Fig. B at or about the same time that they became aware of the flywheel assembly shown in the attached Fig. A. More specifically, the inventors' department of the Assignee became aware of the flywheel assembly structures shown in the attached Figs. A and B sometime between the filing date of February 27, 1990 and January 26, 1993, but the inventors' department is unable to specify exactly when. Thus, the statements made in the Reissue Declaration filed April 9, 1996 regarding the flywheel assembly shown in Fig. A apply equally to Fig. B.

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8. All of the errors corrected by the attached Amendment were discovered upon review of the initial Office Action on the merits in this Reissue Declaration, as mailed October 24, 1996. These errors arose from mistake and inadvertence during the preparation of the original application and the subsequent prosecution that resulted in the issuance of the '635 patent. Specifically, these errors, all of which are believed to involve formal matters not affecting the scope of the claimed invention, existed in the '635 patent and in the present reissue application as a result of oversight by the applicants' representatives.

9. The drawings in the '635 patent are insufficient for the reasons set forth on page 2 of the Office Action. Accordingly, the drawings have been corrected by amending Figs. 1 and 3 of the drawings to add reference numerals corresponding to the claimed elements, and to add new Fig. 5, which is an enlarged view of a central part of the flywheel assembly shown in Fig. 3. The proposed new Fig. 5 includes reference numerals for each of the elements mentioned by the Examiner on page 2 of the Office Action. No new matter is included in new Fig. 5 since all of the structural features therein were disclosed in original Fig. 3 of the drawings. A corresponding amendment to the specification of

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the '635 patent has also been made to provide a brief description of Fig. 5 as "an enlarged view of a central part of the flywheel assembly shown in Fig. 3."

10. The title of the invention in the '635 patent is insufficient for the reason set forth on page 3 of the Office Action. Accordingly, the title of the invention has been changed to --FLYWHEEL [CRANKSHAFT] ASSEMBLY FOR INTERNAL COMBUSTION ENGINE-- so as to correspond with the invention to which the claims are directed.

11. Similarly, the specification of the '635 patent is insufficient because it recites a "crankshaft assembly" when the invention is clearly directed to a --flywheel assembly-- . Accordingly, the specification has been amended throughout to change the phrase "crankshaft assembly" into --flywheel [crankshaft] assembly-- to correct this error.

12. The specification of the '635 patent is insufficient for failing to provide proper antecedent basis for the claimed subject matter, as set forth on page 5 of the Office Action, and for failing to use terminology consistent with the claims, as set forth on pages 9 and 10 of the Office Action. The

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attached Amendment amends the specification of the '635 patent to provide clear antecedent basis for each of the claimed elements, as well as to provide consistent terminology throughout.

13. Specifically, column 3, line 47, through column 4, line 27, of the specification of the '635 patent have been amended to correct the above-mentioned errors as follows:

-- Now, a [crankshaft] flywheel assembly for an internal combustion engine according to preferred embodiments of the present invention will be described hereinbelow with reference to FIGS. 1 to 4.

FIG. 1 shows a first preferred embodiment of the present invention. [An] A driving shaft in the form of an engine crankshaft 1 is connected to pistons through respective connecting rods in a known manner for receiving the driving power therefrom. An elastic [plate] member 2 of this example is substantially of a disc shape, and is fixed, at its inner portion 2f, to one shaft end of the crankshaft 1 by a plurality of bolts 3. As shown in Fig. 1, the elastic member or plate 2 substantially of a disc shape is in the form of a circular plate. The elastic plate 2 [is formed at its] has an outer peripheral [edge] portion 2b which is formed with an axially extending [section] flange 2a to which a ring gear R is fixed. The ring gear R engages with pinion gears of an engine starter motor for transmitting the driving power from the engine starter motor to the crankshaft 1 when starting the engine. The inner portion 2f of the elastic plate 2 is surrounded by the outer portion 2b of the elastic plate 2.

An annular reinforcing member 4 is disposed between the elastic plate 2 and heads of the bolts 3. The reinforcing member 4 is formed at its outer peripheral edge portion with a received portion 4a which is in this example cylindrical [section 4a] and [extending] extends in an axial

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direction of the crankshaft 1. [and with] The reinforcing member 4 of this example further has a radially outwardly extending [section] flange 4b in the form of an outward flange, as shown in Fig. 1. The inner portion 2f of the elastic plate 2 is clamped between the reinforcing member 4 and the shaft end of the crankshaft 1.

A flywheel body 5 of an annular shape is fixed to the elastic plate 2 at their respective outer peripheral [edge] portions 5a and 2b through a plurality of bolts 6 and corresponding reinforcing ring members 7 disposed between the elastic plate 2 and heads of the bolts 6. The annular flywheel body 5 has an inner portion 5h [a stepped inner peripheral edge surface] defining a central mounting [opening] hole 5b for receiving the cylindrical received portion 4a of the reinforcing member 4 therein. The [stepped] inner peripheral [edge] surface of the flywheel body 5 is stepped and has a first surface section 5c extending axially, a second surface section 5d extending radially outward from the first surface section 5c and a third surface section 5e extending axially from the second surface section 5d. Each of the first and third surface sections 5c and 5e faces radially inwardly, and the second surface section 5d faces axially away from the elastic plate 2. The [axial section] axially extending, cylindrical received portion 4a of the reinforcing member 4 is in a slidable contact with the first surface section 5c of the flywheel body 5, and the radial [section] outward flange 4b of the reinforcing member 4 is spaced from the second surface section 5d of the flywheel body 5 by a predetermined [distance] clearance 10 for allowing an axial movement of the flywheel body 5 along with the elastic plate 2. A radially extending [inner] first side surface 5f of the flywheel body 5 facing the elastic plate 2 is spaced apart from the elastic plate 2 by a predetermined [distance] clearance 11 for ensuring an elasticity of the elastic plate 2.

In the example shown in Fig. 1, the side surface 5h of the flywheel body 5 has an outer side surface section 5j and an inner side surface section 5k surrounded by the outer side surface

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section 5j. The outer side surface section 5j faces toward the elastic plate 2 and is fastened to the outer portion 2b of the elastic plate 2. The inner side surface section 5k also faces toward the elastic plate 2. The inner side surface section 5k is raised from the outer side surface section 5j toward the elastic plate 2.

The flywheel body 5 further includes a radially extending side surface 5g at a side axially opposite to the radial surface 5f or the elastic plate 2. The [radial] radially extending side surface 5g is an engaging surface which is engageable with a clutch facing 8 of a clutch disc 9 of a clutch in a known manner so as to control the transmission of the power between the crankshaft 1 and a transmission. --

14. In addition, column 6, lines 54, 60 and 62, and column 7, lines 2, 8, 12, 19, 30, and 31 of the specification of the '635 patent have been amended to correct the above-mentioned errors by inserting --engaging-- between "radial" and "surface 5g."

15. In addition, column 7, line 2, of the specification of the '635 patent has been amended to correct the above-mentioned errors by inserting before "Then" the following sentence:

-- Thus, the crankshaft 1, elastic plate 2, flywheel body 5 and reinforcing member 4 are assembled into a unit 15. --

16. Finally, the specification of the '635 patent has

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been amended to correct the above-mentioned errors by inserting the following description in column 7, between lines 39 and 40, to provide proper antecedent basis for the claimed subject matter:

-- Fig. 5 shows the central part of the flywheel assembly shown in Fig. 3 in more detail.

As in the first embodiment, the annular reinforcing member 4 of the second embodiment extends axially from a first member end 4h to a second member end 4i, as shown in Fig. 5. The axial length of the reinforcing member 4 is the distance D1 between the first and second member ends 4h and 4i. The reinforcing member 4 has an inner portion 4f having an abutment surface which defines the first member end 4h of the reinforcing member 4. The abutment surface 4h of the reinforcing member 4 is in contact with the inner end portion 2d of the elastic plate 2. The inner end portion 2d of the elastic plate 2 has first and second side surfaces which extend radially in parallel to each other. The first side surface of the inner end portion 2d of the elastic plate 2 faces leftward as viewed in Fig. 5, and the second side surface faces rightward. The abutment surface of the reinforcing member 4 faces leftward as viewed in Fig. 5. The leftward facing abutment surface of the reinforcing member 4 is in contact with the rightward facing second side surface of the inner end portion 2d of the elastic plate 2. The leftward facing first side surface of the inner portion 2d of the elastic plate 2 is in contact with the end surface of the crankshaft 1. The first and second side surfaces of the inner portion 2d of the elastic plate 2 extend in a radial direction which is perpendicular to the axial direction of the crankshaft 1. The first and second side surfaces of the inner end portion 2d of the elastic plate 2 are clamped between the abutment surface of the reinforcing member 4 and the end surface of the crankshaft 1, as shown in Fig. 5.

The reinforcing member 4 has the received

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portion 4a received in the central hole 5b of the flywheel body 5. The received portion 4a of the reinforcing member 4 is cylindrical, and in sliding contact with the first surface section 5c of the flywheel body 5 as in the first embodiment. That is, the cylindrical received portion 4a of the reinforcing member 4 has an outside cylindrical surface facing radially outwardly, the first surface section 5c of the flywheel body 5 is an inwardly facing inside cylindrical surface defining the circular center hole 5b, and the cylindrical received portion 4a of the reinforcing member 4 is fit in the center hole 5b of the flywheel body 5 with a radial clearance 12 to form a loose fit. The radial clearance 12 is shown somewhat exaggeratingly in Fig. 5. Each of the elastic plate 2, the reinforcing member 4 and the flywheel body 5 is a rotating member rotating about a center axis C-C shown in Fig. 3, and in the form of a solid of revolution (or solid of rotation) about the center line C-C as shown in Fig. 3. The reinforcing member 4 has an outer circumferential surface which is a surface of revolution generated by rotating a curved line (4j, 4k) about the center line C-C. The outer circumferential surface extends from the abutment surface 4h of the reinforcing member 4 toward the second member end 4i. In this embodiment, the outer circumferential surface of the reinforcing member 4 has an outer cylindrical surface section 4j fit in the central hole 5b of the flywheel body 5, and an outer curved surface section 4k which extends continuously from the outer cylindrical surface section 4j to the abutment surface 4h as shown in Figs. 3 and 5. Between the outward flange 4b and the abutment surface 4h, the outer circumferential surface (4j, 4k) is continuous such that the outer circumferential surface has no abrupt projection and no abrupt depression. The curved surface section 4k is a surface of revolution whose diameter decreases continuously from the diameter of the cylindrical surface section 4i toward the abutment surface 4h, as shown in Figs. 3 and 5. The curved surface section 4k extends from the abutment surface 4h to a curved surface end 4n at which the diameter

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becomes equal to the diameter of the cylindrical surface section 4j. The curved surface end 4n is located axially between the side surface 5f of the flywheel body 5 and the engaging surface 5g of the flywheel body 5.

The engaging surface 5g of the flywheel body 5 is a rotating surface lying in an imaginary flat plane P-P shown in Fig. 3. The second member end 4i of the reinforcing member 4 is located axially between the engaging surface 5g and the first side surface 5f of the flywheel body 5. The second member end 4i is spaced away from the imaginary flat plane P-P toward the elastic plate 2. The axial distance D1 of the second member end 4i from the abutment surface 4h of the reinforcing member 4 is smaller than the axial distance D2 of the engaging surface 5g of the flywheel body 5 from the abutment surface 4h of the reinforcing member 4, as shown in Fig. 5.

As shown in Fig. 5, the outward flange 4b of the reinforcing member 4 has an abutting surface 4m confronting the second surface section 5d of the flywheel body 5, and the axial clearance 10 in the example shown in Fig. 5 is defined between the abutting surface 4m and the second surface section 5d of the flywheel body 5. The axial clearance 11 is defined between the side surface 5f of the flywheel body 5 and a side surface 2g of the elastic plate 2, as shown in Fig. 5.

As shown in Fig. 5, the reinforcing member 4 has a bolt hole 4p, and the elastic plate 2 has a bolt hole 2p. The elastic plate 2 is clamped axially between the reinforcing member 4 and the shaft end of the crankshaft 1 by the bolt 3 passing through the bolt holes 4p and 2p of the reinforcing member 4 and the elastic plate 2. The bolt hole 2p of the elastic plate 2 is located axially between the bolt hole 4p of the reinforcing member 4 and the shaft end of the crankshaft 1. --

17. The claims of the '635 patent are insufficient

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for the reasons set forth on pages 8 to 10 of the Office Action, in addition to those reasons set forth in the Reissue Declaration filed on May 31, 1996. The following amendments to the claims have been made to correct the formal matters raised by the Examiner in the Office Action with regard to 35 U.S.C. § 112, second paragraph:

Claim 1, line 1, after "A flywheel", add --
assembly--;
line 2, change "to a driven unit" into --
-[to a driven unit]--;
line 5, change "engageable" into --
engaging [engageable]--;
line 11, change "to said driven unit"
into --through said flywheel assembly [to said
driven unit]--.

Claim 2, line 1, after "A flywheel", add --
assembly--.

Claim 3, line 1, after "A flywheel", add --
assembly--;
line 2, change "engageable" to --
engaging [engageable]--.

Claim 4, line 1, after "A flywheel", add --
assembly--.

Claim 5, line 1, after "A flywheel", add --
assembly--;
line 20, change "slidably" into --
[slidably]--;
line 21, change "so that" to --with
clearance for allowing [so that]--;
line 22, change "is axially slidable" to
--to slide [is] axially [slidable]--.

Claim 6, line 1, after "A flywheel", add --
assembly--;
line 3, change "engageable" to --
engaging [engageable]--.

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line 10, before "by abutting", change "elastic plate" to --flywheel body [elastic plate]--.

Claim 7, line 1, after "A flywheel", add --assembly--;

line 4, change "engageable" to --engaging [engageable]--.

Claim 8, line 1, after "A flywheel", add --assembly--;

line 2, change "to a driven unit" into --[to a driven unit]--;

lines 5 and 9, change "engageable" into --engaging [engageable]--.

9. A flywheel assembly comprising:
a crankshaft [driving shaft] (1) for transmitting torque;
a circular elastic plate [member] (2) comprising an outer portion and an inner portion and extending radially inwardly from said outer portion to said inner portion, said inner portion of said elastic plate [member] being fastened to a shaft end of said crankshaft [driving shaft];
an annular flywheel body [member] (5) comprising an outer portion and an inner portion and extending radially inwardly from said outer portion to said inner portion of said flywheel body [member], said outer portion of said flywheel body [member] being fastened to said outer portion of said elastic plate [member], said inner portion of said flywheel body [member] comprising a central circular hole; and
a reinforcing member (4) comprising a cylindrical portion (4a) axially extending from a first member end to a second member end, an inner portion extending radially inwardly from said first member end of said cylindrical portion, and an outward flange (4b) extending radially outwardly from said second member end of said cylindrical portion, said inner portion of said reinforcing member being fastened to said shaft end of said crankshaft [driving shaft], said cylindrical portion of said reinforcing member being fit in said circular hold of said flywheel

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plate [member] at an axial distance which allows axial movement of said inner portion of said flywheel body between said inner portion of said elastic plate [member] and said outward flange of said reinforcing member.

Claim 10, line 1, change "3" into --9 [3]--;
line 2, change "elastic member" into --
elastic plate [member]--.

11. A flywheel assembly according to claim 9, wherein a wall thickness of said inner portion of said reinforcing member is greater than a wall thickness of each of said outward flange[s] of said reinforcing member and said inner portion of said elastic plate [member], said wall thickness of each of said inner portion and said outward flange of said reinforcing member and said inner portion of said elastic plate [member] being a dimension measured in an axial direction parallel to an axis of said crankshaft [driving shaft].

12. A flywheel assembly according to claim 9, further comprising a first fastening means for fastening said outer portions of said elastic plate [member] and said flywheel body [member] together, and a second fastening means for fastening said inner portions of said elastic plate [member] and said reinforcing member to said shaft end of said crankshaft [driving shaft], each of said first and second fastening means comprises screw fasteners extending axially along an axis of said crankshaft [driving shaft].

Claim 13, line 1, after "A flywheel", add --
assembly--;
line 2, delete "to a driven unit";
line 6, change "engageable" into --
engaging--;
line 12, change "to said driven unit" to
--through said flywheel assembly--;
line 14, between "clamped" and
"between", insert --axially--;
lines 18 and 19, change ", whereby" to -
--with a clearance allowing--, and change "is
movable" to --to move--.

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Claim 14, line 1, after "A flywheel", insert
--assembly--;
line 2, delete "to a driven unit";
line 6, change "engageable" to --
engaging--;
line 12, between "clamped" and
"between", insert --axially--;
lines 16 and 17, change ", whereby" to -
-with a clearance allowing--, and change "is
movable" to --to move--.

Claim 15, lines 2, 7 and 20, change "driving
shaft" to --crankshaft--;
lines 3, 6, 12, 23 and 30, change
"elastic member" to --elastic plate--;
lines 8, 11, 13, 21 and 26, change
"flywheel member" to --flywheel body--;
line 16, change "first end" to --first
member end--,
and "second end" to --second member end--;
line 26, delete "loosely".

Claim 16, line 2, delete "to a driven unit";
line 7, change "engageable" to --
engaging--;
line 12, change "to said driven unit" to
--through said flywheel assembly--;
line 14, between "clamped" and "between"
insert --axially--.

Claim 17, line 9, change "a smooth" into --
an--.

Claim 18, lines 5, 8, 10 and 13, delete
"smooth";
line 6, delete "smoothly--";
line 11, delete "and smoothly--";
line 14, change "smoothly" into --
continuously --.

Claim 19, lines 3 and 6, change "engageable"
into --engaging--;
lines 5 and 8, change "surface" into --
plane--.

Claim 20, line 8, change "a smooth" to --an--

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Claim 21, lines 3 and 10, change "engageable" into --engaging--.

line 6, change "a smooth" into --an--;
lines 7 and 8, delete "and smoothly".

Claim 22, lines 2 and 5, delete "smooth";
line 4, change "smoothly" into --continuously--.

Claim 23, line 4, change "engageable" into --engaging--;
line 8, change "engagement" to --engaging--.

Claim 24, lines 2 and 6, change "engageable" to --engaging--.
lines 3 and 8, change "surface" into --plane --.

Claim 25, line 9, delete "smooth";
line 10, delete "smoothly and".

Claim 26, line 5, delete "smooth" and "smoothly and".

Claim 28, line 2, change "engageable" to --engaging--.

Claim 29, lines 2 and 4, change "engageable" to --engaging--.

Claim 31, line 2, delete "to a driven unit";
lines 7 and 10, change "engageable" to --engaging--;
line 12, between "clamped" and "between", insert --axially--.

Claim 32, line 9, change "a smooth" into --an--.

Claim 33, lines 5, 8, 10 and 13, delete "smooth";
line 6, change "smoothly" into --continuously--;
line 11, delete "and smoothly".

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Claim 34, line 3, change "engageable" to --
engaging--;
lines 5 and 8, change "surface" to --
plane--;
line 14, delete "smoothly".

Claim 35, line 8, change "a smooth" to --an--

Claim 36, lines 3 and 10, change "engageable"
to --engaging--.
line 6, change "a smooth" to --an--
lines 7-8, delete "and smoothly".

Claim 37, lines 2 and 6, delete "smooth";
line 4, change "smoothly" into --
continuously--.

Claim 38, line 4, change "engageable" to --
engaging--.

Claim 39, lines 2 and 6, change "engageable"
to --engaging--;
lines 3 and 8, change "surface" to --
plane--.

Claim 40, line 9, delete "smooth";
line 10, delete "smoothly and".

Claim 41, line 5, delete "smooth" and
"smoothly and".

Claim 42, lines 2 and 4, change "engageable"
to --engaging--.

18. In addition to the above-described errors, the issued claims of the '635 patent are at least partly inoperative for failing to claim several features of the disclosed invention. Specifically, the claims fail to recite several of the structural features of the disclosed reinforcing member, as well as the interrelationship of the flywheel body, the elastic plate, and

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the reinforcing member, which are common to both the flywheel assembly shown in the attached Figs. A, B, and C and the embodiments disclosed in the '635 patent.

19. Applicants propose to remedy the errors mentioned in the previous paragraph by adding new claims 43 and 45, which depend from new independent claim 16, and by adding new claims 44 and 46, which depend from new independent claim 31. These new dependent claims 43 to 46 set forth several additional features of the applicants' invention that further define the claimed subject matter. The limitations found in the new dependent claims are discussed below in detail.

20. New claims 43 and 44, which depend from claims 16 and 31, respectively, recite additional features of the applicants' invention as follows:

wherein said reinforcing member comprises an abutment surface facing in a first axial direction along said crankshaft and extending in a radial direction perpendicular to said first axial direction, said inner portion of said elastic plate comprises a first side surface facing in said first axial direction and extending in said radial direction and a second side surface facing in a second axial direction opposite to said first axial direction and extending in said radial direction, said shaft end of said crankshaft comprises a shaft end surface facing in said second axial direction and

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extending in said radial direction, said abutment surface of said reinforcing member is in contact with said second side surface of said inner portion of said elastic plate, said first side surface of said inner portion of said elastic plate is in contact with said shaft end surface of said crankshaft, and said first and second side surfaces of said elastic plate are located between said abutment surface of said reinforcing member and said shaft end surface of said crankshaft.

The additional structural features recited in new claims 43 and 44 are common to both the flywheel assemblies shown in the attached Figs. A and B and the embodiments disclosed in the '635 patent. New claims 43 and 44 are presented to further define the claimed subject matter to which the applicants are entitled, as disclosed in the '635 patent.

21. New claims 45 and 46, which depend from claims 16 and 31, respectively, recite additional features of the applicants' invention as follows:

wherein said reinforcing member comprises a bolt hole, said elastic plate comprises a bolt hole, said elastic plate is clamped between said reinforcing member and said shaft end of said crankshaft by a bolt passing through said bolt holes of said reinforcing member and said elastic plate, said bolt hole of said elastic plate is located between said bolt hole of said reinforcing member and said shaft end of said crankshaft.

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The additional structural features recited in new claims 45 and 46 are common to both the flywheel assemblies shown in the attached Figs. A and B and the embodiments disclosed in the '635 patent. New claims 45 and 46 are presented to further define the claimed subject matter to which the applicants are entitled, as disclosed in the '635 patent.

22. It is believed that the foregoing distinctly specifies the additional errors in the '635 patent that the applicants seek to correct by this reissue, as required by 37 C.F.R. § 1.175(a)(3).

23. The additional written description, new claims, and drawing added to this reissue application are believed to be adequately supported by the specification and drawings contained in the original application Serial No. 07/485,659 on which the '635 patent is based. Thus, no new matter has been added to correct the above-noted errors.

24. We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false

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statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Wherefore, we hereby subscribe our names to the foregoing Supplemental Reissue Declaration.

Date:	<u>2/26/1997</u>	By:	<u>Satoshi Kono</u> Satoshi Kono
Date:	<u>2/26/1997</u>	By:	<u>Shizuaki Hidaka</u> Shizuaki Hidaka
Date:	<u>2/26/1997</u>	By:	<u>Tetsu Takahashi</u> Tetsu Takahashi